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EXAMINER

HUTTON JR, WILLIAM D

ART UNIT	PAPER NUMBER
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2178

13

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/283,561

Applicant(s)

CHALLENGER ET AL.

Examiner

Doug Hutton

Art Unit

2178

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,8-29,34-53,55-65 and 67-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,8-29,34-53,55-65 and 67-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's Response

In Paper No. 12, Applicant amended Claims 1-3, 8, 9, 20, 21, 25, 27-29, 34, 35, 46, 47, 51, 53, 61-64, 67 and 68, cancelled Claim 65, attempted to reinstate Claims 4 and 30, and argued against all objections and rejections previously set forth in Paper No. 10.

The objection to the specification previously set forth in Paper No. 10 is withdrawn. All rejections previously set forth in Paper 10 are withdrawn.

Reinstatement of Claims

Applicant has attempted to reinstate Claims 4 and 30. This cannot be done. See 37 C.F.R. 1.121(c)(2).

Claim Objections

Claims 1, 27 and 61 are objected to because of the following informalities:

- the term "objects" in Claim 1, Line 1 should be amended to — web pages — because Applicant's invention is used to publish web pages *that include objects*, as specified on Page 9, Lines 20-21 in the Specification; the term "objects" is used **extensively** throughout the claims to describe different elements of the present invention, and this causes confusion; for clarity in the claims, the term "objects" should be used only when it describes the ***individual components*** that

comprise a web page; all other “objects” in the claims should be called another name; Claim 27 (Line 3) and Claim 61 (Line 1) have the same problem;

Claims 16, 42, 53 are objected to because of the following informalities:

- the term “objects” in Claim 16, Line 1 should be amended to — web pages — because Applicant’s invention is used to publish web pages *that include objects*, as specified on Page 9, Lines 20-21 in the Specification; the term “objects” is used **extensively** throughout the claims to describe different elements of the present invention, and this causes confusion; for clarity in the claims, the term “objects” should be used only when it describes the ***individual components*** that comprise a web page; all other “objects” in the claims should be called another name; Claims 42 (Line 3) and 53 (Line 1) have the same problem;

Claims 20, 46 and 62 are objected to because of the following informalities:

- the term “said” should be inserted after the term “representing” in Claim 20, Line 3 because the element that follows has already been recited in the claims (see Claim 16); and
- the term “relationships” in Claim 20, Line 4 has no antecedent basis because no “relationship” is previously recited in the claims (Claims 46 and 62 have these same problems).

Claims 22 and 48 are objected to because of the following informalities:

- the term “connections” in Claim 22, Line 1 has no antecedent basis because no “connection” is previously recited in the claims (Claim 48 has the same problem).

Claims 23 and 49 are objected to because of the following informalities:

- the phrase “a graph including dependence edges between objects” in Claim 23, Lines 4-5 should be amended to — said at least one graph along said edges between said nodes — because that is how the elements are previously identified (see Claim 20);
- the phrase “the graph” in Claim 23, Line 6 should be amended to — said at least one graph — because that is how the elements are previously identified (see Claim 20); Claim 49 has the same problems.

Claim 53 is objected to because of the following informalities:

- the claim recites “objects” in Line 3, Line 4 and Line 8. The “objects” in Lines 3 and 4 are the same “objects.” However, it is unclear whether the “objects” in Line 8 are from the “objects” of Lines 3 and 4 or are completely different “objects.” Applicant should amend the claim to differentiate between these objects, if they are in fact different objects.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 29 and 63 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 3:

The claim includes the limitation “wherein the step of traversing the at least one graph to determine an order includes the step of *selecting the order based on one of performance and correct construction of the plurality of objects*” (Lines 1-4). The written description of the invention does not mention anything about “selecting order” based on “performance” and “correct construction” of the objects.

One of ordinary skill in the art at the time the invention was made would not know how to determine the order of construction for a group of web pages based on “performance” and “correct construction.” The specification of the present invention does not specify how these bases are defined. These bases of construction order are much too vague to enable one of ordinary skill to make and use the invention as claimed without undue experimentation.

Applicant must amend the claims and/or the specification to obviate this rejection.

Claims 29 and 63 have the same problem.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23, 49 and 63 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 23 and 49:

The claims recite the limitation “constructing a *union between a set including a second object and a set including changed fragments needed to construct the second object for at least one edge which begins with the second object and terminates in the first object and for which the second object has changed*” (Lines 7-9). This limitation is indefinite because it is confusingly worded and makes no sense to the examiner.

Applicant must amend the claim to clarify.

Claim 63:

The claim recites the limitation “wherein the step of traversing the at least one graph to determine an order includes the step of selecting the order *based on one of*

performance and correct construction of the plurality of objects" (Lines 1-3). This limitation is indefinite because it is unclear how selection of an "order" can be based on "performance" and "correct construction" of the plurality of objects. Examiner does not understand what is meant by "performance of the plurality of objects" and "correct construction of the plurality of objects." How do the objects "perform?" Which "performance" of the objects is the basis for the order selection? Also, how is the order selection "based on correct construction" – especially when the objects are **first** selected and then **subsequently** constructed?

Applicant must amend the claim to clarify.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 8-15, 27-29, 34-41, 61-64 and 67-74 are rejected under 35

U.S.C. 102(e) as being anticipated by Challenger et al., U.S. Patent No. 6,256,712.

Claims 1, 27 and 61:

Challenger discloses a method for publishing objects (see Column 2, Lines 53-66), comprising the steps of:

- representing one or more inclusion relationships between objects in a plurality of objects using at least one graph (see the “object dependence graphs” in Figure 1B and Figure 12B that represent “relationships between objects”);
- traversing the at least one graph to determine an order in which to construct one or more objects in the plurality of objects based on the one or more inclusion relationships (see Column 7, Line 17 through Column 8, Line 45 – the cache manager “traverses” the object dependence graph to determine an order in which to construct one or more objects based on the relationships; see also Column 14, Lines 30-64 – the object manager “traverses” the object dependence graph to determine an order in which to construct one or more objects based on the relationships in that it “follows the edges” in the object dependence graph and updates the objects in order beginning with the changed object and continuing with the affected objects);
- constructing the one or more objects based on the determined order (the invention discloses this step in that the affected objects are updated); and
- publishing the one or more constructed objects (the invention discloses this step in that the affected objects are published).

Claim 27 essentially recites software that performs the method of Claim 1. Thus, Claim 27 is rejected using the same rationale.

Claim 61 essentially recites, in slightly broader terms, the method of Claim 1. Thus, Claim 61 is rejected using the same rationale.

Claims 2, 28 and 62:

Challenger discloses the method of Claim 1, wherein the step of representing includes representing objects in the plurality of objects by nodes and representing the one or more inclusion relationships by at least one edge between nodes (see Figure 1B and Figure 12B).

Claims 3, 29 and 63:

Challenger discloses the method of Claim 1, wherein the step of traversing the at least one graph to determine an order includes the step of selecting the order based on one of performance and correct construction of the plurality of objects (see Column 7, Line 17 through Column 8, Line 45; see also Column 14, Lines 30-64).

Claims 8, 34 and 67:

Challenger discloses the method of Claim 1, wherein all of the one or more constructed objects are published together.

Claims 9, 35 and 68:

Challenger discloses the method of Claim 1, wherein the step of publishing includes the steps of:

- partitioning one or more of the plurality of objects into a plurality of groups (the objects are "partitioned into a plurality of groups" in that each object comprises a separate web page); and
- publishing all objects belonging to a same group together (the objects "belonging to a same group" are published together in that the web pages, comprised of the "partitioned group of objects," are published).

Claims 10, 36 and 69:

Challenger discloses the method of Claim 9, wherein the step of publishing all objects belonging to a same group together includes the step of:

- for at least two of the plurality of groups, publishing all objects belonging to a first group before publishing any objects belonging to a second group (the "objects belonging to a first group" are published before any "objects belonging to a second group" are published, in that one web page is published before another web page).

Claims 11, 37 and 70:

Challenger discloses the method of Claim 1, wherein the step of publishing includes the step of satisfying at least one consistency constraint ("consistency

constraints” are “satisfied” in that, when underlying data is modified, all affected objects are updated).

Claims 12, 38 and 71:

Challenger discloses the method of Claim 11, wherein the step of satisfying at least one consistency constraint includes the step of delaying publication of a first object until a second object which is referenced by the first object is published (the “second object” is published before the “first object” because the “second object” includes a hyperlink to the “first object”).

Claims 13, 39 and 72:

Challenger discloses the method of Claim 12, wherein the first object and the second object include Web pages and a reference between the first and second objects includes a hypertext document/link (both “objects” are web pages that are hyperlinked).

Claims 14, 40 and 73:

Challenger discloses the method of Claim 11, wherein the step of satisfying at least one consistency constraint includes the step of publishing two compound objects together if the compound objects are both constructed from at least one common changed fragment (all “objects” that include “common updated fragments” are published together in that web pages including updated common underlying data are published together).

Claims 15, 41 and 74:

Challenger discloses the method of Claim 1, wherein at least one of the plurality of objects is a Web page.

Claim 64:

Challenger discloses the method of Claim 61, wherein the step of traversing is performed by employing at least one topological sort on the at least one graph (as discussed in the above rejection for Claim 1, the object manager “traverses” the object dependence graph by “following the edges” in the object dependence graph and updates the objects in order beginning with the changed object and continuing with the affected objects; this is a “topological sort”).

Claims 16, 17, 42 and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Darnell, Rick et al., Using Macromedia Dreamweaver 1.2 Que Publishing (June 1998).

Claim 16:

Darnell discloses a method for publishing a plurality of objects (see Chapter 8 – “Reusable Parts for Web Pages”), comprising the steps of:

- providing a plurality of objects (see Pages 117-123 – the reference discloses this step in that the web site has a plurality of web pages; each web page is an

“object”), including compound objects (see Pages 117-123 – the web pages are “compound objects” in that multiple components comprise the web pages);

- partitioning at least some of the plurality of objects into a plurality of groups such that if two compound objects are constructed from at least one common changed fragment, then the compound objects are placed in a same group (see Pages 117-123 – the “library items” are used in construction of the web pages and can be edited; the edited “library items” are the “changed fragments”; once a “library item” is edited, the web pages are “partitioned” into at least two groups; those web pages that include the edited “library item” are placed in a same group); and
- publishing all objects belonging to a same group together (see Pages 117-123 – the web pages that include the edited “library item” are “published together,” as specified in the cited text).

Claim 17:

Darnell discloses a method for publishing a plurality of objects, wherein the step of publishing includes the step of:

- for at least two of the plurality of groups, publishing all objects belonging to a first group before publishing any objects belonging to a second group (see Pages 117-123 – a first “library item” can be edited, and all of the web pages that include the edited first “library item” can be published; subsequently, a second “library item” can be edited, and all of the web pages that include the edited second “library item” can be published).

Claims 42 and 43:

Claims 42 and 43 are merely the program storage device containing the method described in Claims 16 and 17. Accordingly, Claims 42 and 43 are rejected using the same rationale.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darnell, Rick et al., Using Macromedia Dreamweaver 1.2 Que Publishing (June 1998).

Claims 18, 19, 44 and 45:

As indicated in the above discussion, Darnell discloses every element of Claim 16. Darnell also discloses "delaying publication of a first object until a second object is published" in that the two "objects" (i.e., web pages) are published together. Darnell also discloses first and second objects that are web pages.

Darnell fails to expressly disclose delaying publication of a first object until a second object *which is referenced by the first object, via a hyperlink*, is published.

However, it was well-known by one of ordinary skill in the art at the time the invention was made to publish web pages in a certain order so that the first web page would not include a hyperlink to the second web page before the content on the second web page was updated. Webmasters did this so that all web pages for a website correspond and include the latest version of all components that comprise the web pages.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, to include the step of delaying publication of a first object until a second object which is referenced by the first object, via a hyperlink, is published so that the first web page would not include a hyperlink to the second web page before its content was updated.

Claims 20-22 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darnell, Rick et al., Using Macromedia Dreamweaver 1.2 Que Publishing (June 1998), in view of Ferrel et al., U.S. Patent No. 6,199,082.

Claim 20:

As indicated in the above discussion, Darnell discloses every element of Claim 16.

Darnell fails to expressly disclose:

- representing objects by nodes on at least one graph; and
- representing relationships between the objects by connections between the nodes (An acyclic graph *inherently* represents objects in a plurality of objects by

nodes and represents relationships by connections between nodes. This limitation simply describes an “acyclic graph.”).

Ferrel teaches a method for publishing a plurality of objects (Column 1, Lines 8-11), comprising the steps of:

- representing objects by nodes on at least one graph (Column 9, Lines 30-39 – related objects are stored on an acyclic graph. An acyclic graph *inherently* represents objects by nodes. This limitation simply describes an “acyclic graph.”); and
- representing relationships between the objects by edges between the nodes (An acyclic graph *inherently* represents objects by nodes and represents relationships between those objects by edges between nodes. This limitation simply describes an “acyclic graph.”),

for the purposes of organizing the relationships between the objects and graphically displaying those relationships.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, to include the steps of representing objects by nodes on at least one graph and representing relationships between the objects by edges between the nodes for the purposes of organizing the relationships between the objects and graphically displaying those relationships, as taught in Ferrel.

Claim 21:

Darnell, in view of Ferrel, fails to expressly disclose a graph that includes an edge between two nodes representing compound objects if the two compound objects are constructed from at least one common changed fragment. However, this limitation is merely reciting an *inherent* characteristic of an acyclic directed graph.

As indicated in the above rejection for Claim 20, Ferrel teaches an acyclic graph that represents relationships between objects by edges between nodes. Any directed acyclic graph that includes two nodes representing two compound objects constructed from a common fragment will *inherently* have an edge between the two nodes.

Claim 22:

Darnell, in view of Ferrel, fails to expressly disclose connections that include a directed edge from a first node representing a first object to a second node representing a second object, if the second object includes a reference to the first object. However, this limitation is merely reciting an *inherent* characteristic of an acyclic directed graph.

As indicated in the above rejection for Claim 20, Ferrel teaches an acyclic graph that represents relationships between objects by edges between nodes. Any directed acyclic graph that includes a directed edge from a first node to a second node, if the second object includes a reference to the first object, will *inherently* have a directed edge between the two nodes.

Claims 46-48:

Claims 46-48 are merely the program storage device containing the method described in Claims 20-22. Accordingly, Claims 46-48 are rejected using the same rationale.

Claims 23-26, 49-53 and 55-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darnell, Rick et al., Using Macromedia Dreamweaver 1.2 Que Publishing (June 1998), in view of Ferrel et al., U.S. Patent No. 6,199,082, and further in view of Cormen et al., "Introduction to Algorithms" ©1990, pp. 477-493.

Claim 23:

As indicated in the above discussion, Darnell, in view of Ferrel, discloses every element of Claim 20.

Darnell, in view of Ferrel, fails to disclose determining if a first compound object and a second compound object embed at least one common changed fragment by:

- topologically sorting at least part of a graph including dependence edges between objects;
- examining the graph in an order defined by the topological sort; and
- constructing a union between a set including a second object and a set including changed fragments needed to construct the second object for at least one edge which begins with the second object and terminates in the first object and for which the second object has changed.

Cormen teaches determining if a first compound object and a second compound object embed at least one common changed fragment by:

- topologically sorting at least part of a graph including dependence edges between objects (Page 485, fifth and sixth full paragraphs);
- examining the graph in an order defined by the topological sort (Page 485, fifth and sixth full paragraphs); and
- constructing a union between a set including a second object and a set including changed fragments needed to construct the second object for at least one edge which begins with the second object and terminates in the first object and for which the second object has changed,

for the purpose of indicating precedence among the objects (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, in view of Ferrel, to include the steps of:

- topologically sorting at least part of a graph including dependence edges between objects;
- examining the graph in an order defined by the topological sort; and
- constructing a union between a set including a second object and a set including changed fragments needed to construct the second object for at least one edge which begins with the second object and terminates in the first object and for which the second object has changed,

for the purpose of indicating precedence among the objects, as taught in Cormen.

Claim 24:

Darnell, in view of Ferrel, fails to disclose performing a topological sort on at least part of the at least one graph for finding strongly connected components.

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- performing a topological sort on at least part of the at least one graph for finding strongly connected components (Pages 488-493),

for the purpose of converting a directed graph into an acyclic component graph (see Figure 23.9 on Page 489) so as to indicate precedence among the objects that comprise nodes of the graph (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, in view of Ferrel, to include the step of performing a topological sort on at least part of the at least one graph for finding strongly connected components for the purpose of indicating precedence among the objects that comprise nodes of the graph, as taught in Cormen.

Claims 25:

Darnell, in view of Ferrel, discloses a method for publishing a plurality of objects, further comprising the step of:

- publishing a set of objects of the at least one graph together (as explained in the rejection for Claim 16, the objects are partitioned into groups and then published together).

Darnell, in view of Ferrel, fails to expressly disclose a method for publishing a plurality of objects, comprising the step of:

- publishing a set of objects ***belonging to a same strongly connected component*** together.

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- examining objects in an order defined by topological sorting (Page 485, fifth and sixth full paragraphs); and
- finding at least one strongly connected component in the at least one graph (Pages 488-493),

for the purpose of converting a directed graph into an acyclic component graph (see Figure 23.9 on Page 489) so as to indicate precedence among the objects that comprise nodes of the graph (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for publishing objects, disclosed in Darnell, in view of Ferrel, to include the step of:

- publishing a set of objects belonging to a same strongly connected component of the at least one graph together,

for the purpose of converting a directed graph into an acyclic component graph so as to indicate precedence among the objects that comprise nodes of the graph, as taught by Cormen.

Claim 26:

Darnell, in view of Ferrel, discloses a method for publishing a plurality of objects, comprising the steps of:

- examining objects in an order (in Darnell, the objects are “examined in an order” in that they are partitioned into groups, as discussed in the above rejection for Claim 16); and
- when an unpublished object is examined, publishing the unpublished object together with all objects (in Darnell, all the web pages can be updated at the same time; thus, “when an unpublished object is examined,” it is published together with all objects).

Darnell, in view of Ferrel, fails to expressly disclose a method for publishing a plurality of objects, comprising the step of:

- examining objects in an order ***defined by the topological sort***, and
- when an unpublished object is examined, publishing the unpublished object together with all objects ***belonging to a same strongly connected component***.

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- examining objects in an order defined by topological sorting (Page 485, fifth and sixth full paragraphs); and
- finding at least one strongly connected component in the at least one graph (Pages 488-493),

for the purpose of converting a directed graph into an acyclic component graph (see Figure 23.9 on Page 489) so as to indicate precedence among the objects that comprise nodes of the graph (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for publishing objects, disclosed in Darnell, in view of Ferrel, to include the steps of:

- examining objects in an order defined by the topological sort; and
- when an unpublished object is examined, publishing the unpublished object together with all objects belonging to a same strongly connected component,

for the purpose of converting a directed graph into an acyclic component graph so as to indicate precedence among the objects that comprise nodes of the graph, as taught by Cormen.

Claims 49-52:

Claims 49-52 are merely the program storage device containing the method described in Claims 23-26. Accordingly, Claims 49-52 are rejected using the same rationale.

Claim 53:

Darnell discloses a method for publishing a plurality of objects (see Chapter 8 – “Reusable Parts for Web Pages”), comprising the steps of:

- providing a plurality of objects (see Pages 117-123 – the reference discloses this step in that the web site has a plurality of web pages; each web page is an “object”); and
- publishing a set of objects (see Pages 117-123 – web pages that include the edited “library item” are partitioned into a set and “published together,” as specified in the cited text).

Darnell fails to expressly disclose:

- constructing at least one graph, the at least one graph including nodes representing objects in the plurality of objects and edges for connecting nodes having relationships, at least some of the edges being derived from at least one consistency restraint.

Ferrel teaches:

- constructing at least one graph (Column 9, Lines 30-31 – the acyclic graph), the at least one graph including nodes representing objects in the plurality of objects and edges for connecting nodes having relationships (Ferrel expressly discloses an acyclic graph, which *inherently* includes nodes that represent objects and edges for connecting nodes having relationships; these “nodes” and “edges” simply describe an acyclic graph), at least some of the edges being derived from at least one consistency restraint (similarly, “edges” are *inherently* derived from a consistency restraint; for example, when a graph is topologically sorted, the “sort” follows the edges and imposes “consistency constraints”), for the purposes of organizing the relationships between the objects and graphically displaying those relationships.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, to include the step of constructing at least one graph, the at least one graph including nodes representing objects in the plurality of objects and edges for connecting nodes having relationships, at least some of the edges being derived from at least one consistency restraint for the purposes of organizing the relationships between the objects and graphically displaying those relationships, as taught in Ferrel.

Darnell, in view of Ferrel, fails to expressly disclose:

- finding at least one strongly connected component in the at least one graph; and

- publishing a set of objects ***belonging to a same strongly connected component group.***

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- finding at least one strongly connected component in the at least one graph (Pages 488-493).

for the purpose of converting a directed graph into an acyclic component graph (see Figure 23.9 on Page 489) so as to indicate precedence among the objects that comprise nodes of the graph (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for publishing objects, disclosed in Darnell, in view of Ferrel, to include the steps of:

- finding at least one strongly connected component in the at least one graph; and
- publishing a set of objects belonging to a same strongly connected component group,

for the purpose of converting a directed graph into an acyclic component graph so as to indicate precedence among the objects that comprise nodes of the graph, as taught by Cormen.

Claim 55:

Darnell, in view of Ferrel, fails to expressly disclose a method for publishing a plurality of objects, comprising the step of:

- topologically sorting at least part of the at least one graph.

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- topologically sorting at least part of the at least one graph (Page 485, fifth and sixth full paragraphs),

for the purpose of indicating precedence among the objects (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for publishing a plurality of objects, disclosed in Darnell, in view of Ferrel, to include the step of topologically sorting at least part of the at least one graph for the purpose of indicating precedence among the objects, as taught by Cormen.

Claim 56:

Darnell, in view of Ferrel, discloses a method for publishing a plurality of objects, comprising the steps of:

- examining objects in an order (in Darnell, the objects are “examined in an order” in that they are partitioned into groups, as discussed in the above rejection for Claim 16); and

- when an unpublished object is examined, publishing the unpublished object together with all objects (in Darnell, all the web pages can be updated at the same time; thus, “when an unpublished object is examined,” it is published together with all objects).

Darnell, in view of Ferrel, fails to expressly disclose a method for publishing a plurality of objects, comprising the step of:

- examining objects in an order ***defined by topological sorting***; and
- when an unpublished object is examined, publishing the unpublished object together with all objects ***belonging to a same strongly connected component***.

Cormen teaches a method of performing a topological sort of an acyclic graph, comprising the step of:

- examining objects in an order defined by topological sorting (Page 485, fifth and sixth full paragraphs); and
- finding at least one strongly connected component in the at least one graph (Pages 488-493),

for the purpose of converting a directed graph into an acyclic component graph (see Figure 23.9 on Page 489) so as to indicate precedence among the objects that comprise nodes of the graph (Page 485, fifth and sixth full paragraphs).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for publishing objects, disclosed in Darnell, in view of Ferrel,, to include the steps of:

- examining objects in an order defined by topological sorting; and
- when an unpublished object is examined, publishing the unpublished object together with all objects belonging to a same strongly connected component, for the purpose of converting a directed graph into an acyclic component graph so as to indicate precedence among the objects that comprise nodes of the graph, as taught by Cormen.

Claims 57 and 58:

Darnell discloses a “consistency constraint” that includes “delaying publication of a first object until a second object is published” in that the two “objects” (i.e., web pages) are published together. Darnell also discloses first and second objects that are web pages.

Darnell fails to expressly disclose delaying publication of a first object until a second object *which is referenced by the first object, via a hyperlink*, is published. However, it was well-known by one of ordinary skill in the art at the time the invention was made to publish web pages in a certain order so that the first web page would not include a hyperlink to the second web page before the content on the second web page was updated. Webmasters did this so that all web pages for a website correspond and include the latest version of all components that comprise the web pages.

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method, disclosed in Darnell, in view of Ferrel, and further in view of Cormen, to include a consistency constraint that includes delaying publication of a first object until a second object which is referenced by the first object, via a hyperlink, is published so that the first web page would not include a hyperlink to the second web page before its content was updated.

Claim 59:

Darnell, in view of Ferrel, fails to expressly disclose an edge from a first object to a second object in at least one of the at least one graphs if the second object has a reference to the first object. However, this limitation is merely reciting an ***inherent*** characteristic of an acyclic directed graph.

As indicated in the above rejection for Claim 20, Ferrel teaches an acyclic graph that represents relationships between objects by edges between nodes. Any directed acyclic graph that includes a directed edge from a first node to a second node, if the second object includes a reference to the first object, will ***inherently*** have a directed edge between the two nodes.

Claim 60:

Darnell discloses a consistency constraint that includes publishing two compound objects together if the two compound objects are both constructed from at least one common changed fragment (see the above rejection for Claim 16).

Response to Arguments

Applicant's arguments with respect to the rejections for Claims 23, 49 and 63 under 35 U.S.C. 112, second paragraph, have been considered but are not persuasive.

Applicant's Arguments for Claims 23 and 49:

Applicant argues that the subject matter of Claims 23 and 49 is clear and definite. Applicant directs examiner's attention to Page 16, Line 17 through Page 17, Line 12 of the Specification with no further detailed argument.

Examiner disagrees.

The pertinent language of the claim reads: "constructing a union between a set including a second object and a set including changed fragments needed to construct the second object for at least one edge which begins with the second object and terminates in the first object and for which the second object has changed" (Lines 7-9). This limitation is utterly confusing.

The limitation recites "two sets" – one of which includes the "second object" and another of which includes "changed fragments." It then recites an "edge" beginning at the "second object" and ending at the "first object." With the current wording of the limitation, it is unclear how this "edge" is involved in "constructing a union" between the "two sets."

Finally, the limitation recites "for which the second object has changed." It is unclear what "change" in the "second object" has occurred. Also, it is unclear for what the "second object" has "changed."

Applicant's arguments with respect to the substantive rejections for Claims 1-74 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Doug Hutton whose telephone number is (703) 305-1701. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon, can be reached at (703) 308-5186. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

WDH
April 16, 2004


HEATHER HERNDON
SUPERVISORY PATENT EXAMINER
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